SANTA CRUZ BIOTECHNOLOGY, INC.

p-MEK kinase-3 (Ser 166)-R: sc-28043-R

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Mitogen-activated protein (MAP) kinase cascades are activated by various extracellular stimuli including growth factors. The MEK kinases (also called MAP kinase kinase kinases) phosphorylate and activate the MAP kinases, including ERK, JNK and p38. The MEK kinases characterized to date include Raf-1, Raf-B, MOS, MEK kinase-1, MEK kinase-2, MEK kinase-3, MEK kinase-4 and ASK 1 (also designated MEK kinase-5). MEK kinase-1 has been shown to phosphorylate MEK-1 via a Raf-independent pathway. Evidence suggests that MEK-3 is preferentially activated by MEK kinase-3 and that MEK-4 is activated by both MEK kinase-2 and MEK kinase-3. MEK kinase-4 has been shown to specifically activate the JNK pathway. ASK 1 activates both MEK-4 and MEK-3/MEK-6 pathways. SGK1 inhibits MEK-3-MKK3/6 signal transduction by phosphorylation of MEK-3 on Ser 166 and Ser 337.

REFERENCES

1. Lange-Carter, C.A., et al. 1993. A divergence in the MAP kinase regulatory network defined by MEK kinase and Raf. Science 260: 315-319.
2. Guan, K.L. 1994. The mitogen activated protein kinase signal transduction pathway: from the cell surface to the nucleus. Cell. Signal. 6: 581-589.
3. Wang, X.S., et al. 1996. Molecular cloning and characterization of a novel protein kinase with a catalytic domain homologous to mitogen-activated protein kinase kinase kinase. J. Biol. Chem. 271: 31607-31611.
4. Fanger, G.R., et al. 1997. MEK kinases are regulated by EGF and selectively interact with Rac/Cdc42. EMBO J. 16: 4961-4972.
5. Gerwins, P., et al. 1997. Cloning of a novel mitogen-activated protein kinase kinase kinase, MEKK4, that selectively regulates the c-Jun amino terminal kinase pathway. J. Biol. Chem. 272: 8288-8295.
6. Deacon, K., et al. 1997. Characterization of the mitogen-activated protein kinase kinase 4 (MKK4)/ c-Jun NH_2-terminal kinase 1 and MKK3/p38 pathways regulated by MEK kinases-2 and 3. MEK kinase-3 activates MKK3 but does not cause activation of p38 kinase *in vivo*. J. Biol. Chem. 272: 14489-14496.
7. Adams, D.G., et al. 2002. Phosphorylation of the stress-activated protein kinase, MEKK3, at serine 166. Arch. Biochem. Biophys. 407: 103-116.
8. Chun, J., et al. 2003. Inhibition of mitogen-activated kinase kinase kinase 3 activity through phosphorylation by the serum- and glucocorticoid-induced kinase 1. J. Biochem. 133: 103-108.

CHROMOSOMAL LOCATION

Genetic locus: MAP3K3 (human) mapping to 17q23.3; Map3k3 (mouse) mapping to 11 E1.

SOURCE

p-MEK kinase-3 (Ser 166)-R is a rabbit polyclonal antibody raised against a short amino acid sequence containing Ser 166 phosphorylated MEK kinase-3 of human origin.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-28043 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-MEK kinase-3 (Ser 166)-R is recommended for detection of Ser 166 phosphorylated MEK kinase-3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

p-MEK kinase-3 (Ser 166)-R is also recommended for detection of correspondingly phosphorylated MEK kinase-3 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for MEK kinase-3 siRNA (h): sc-39108, MEK kinase-3 siRNA (m): sc-156010, MEK kinase-3 shRNA Plasmid (h): sc-39108-SH, MEK kinase-3 shRNA Plasmid (m): sc-156010-SH, MEK kinase-3 shRNA (h) Lentiviral Particles: sc-39108-V and MEK kinase-3 shRNA (m) Lentiviral Particles: sc-156010-V.

Molecular Weight of p-MEK kinase-3: 71 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 2) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Sokolova, O., et al. 2014. MEKK3 and TAK1 synergize to activate IKK complex in *Helicobacter pylori* infection. Biochim. Biophys. Acta 1843: 715-724.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.